REMARKS

Summary of the claims

Claims 32-46 are pending and rejected.

Claim 32-46 has been rejected.

By way of this amendment, claims 35, 39, 42 and 45 have been canceled.

Upon entry of this amendment, claims 32-34, 36-38, 40, 41, 43, 44 and 46 will be pending.

Declaration of David B. Weiner

Provided herewith is the unexecuted declaration of co-inventor David B. Weiner. Attached to the declaration is the publication Levy D.N., Refaeli, Y. and Weiner D.B. (Feb. 1995) J. Virology 69(2):1243-1252. Applicants will provide an executed copy of the declaration by separate correspondence.

New Matter Rejection

Claims 36, 39, 40, 42, 43, 45 and 46 have been rejected under 35 U.S.C. §112, first paragraph, because it is asserted that the subject matter was not described in the specification in such a way to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, were in possession of the claimed invention.

Claims 39, 42 and 45 have been canceled and the rejection as applied to those claims is moot.

With respect to claim 36, 40, 43 and 46, Applicants respectfully assert that the claims are supported by the disclosure on page 89, lines 18-22 which says:

> Some inhibitors of the vpr effect on viral infectivity include rabbit anti-vpr peptide (amino acids 2-12) #808 and rabbit anti-vpr that was made in baculovirus. Antisera was used at different dilutions: 1:20, 1:50, 1:250; 1:1000; 1:5000.

The specification thus clearly discloses two antibodies which bind to a Vpr including one rabbit antibody which binds to a Vpr peptide that is made up of amino acids 2-12. The specification clearly stated that both of the antibodies inhibit Vpr activity, specifically, viral infectivity. One skilled in the art viewing the specification in its totality would conclude that the specification discloses the subject matter in such a way to reasonably convey to one

skilled in the relevant art that the inventors, at the time the application was filed, were in possession of the invention as claimed in claims 36, 40, 43 and 46. Applicants respectfully request that the rejection as applied to claims 36, 40, 43 and 46 be reconsidered and withdrawn.

Enablement Rejection

Claims 32-46 have been rejected under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one having ordinary skill in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. It is asserted that the disclosure fails to provide adequate direction/guidance and working examples, that the claim breadth is excessive, and that the state of the art is unpredictable. Thus, it is asserted it would require under experimentation for one of ordinary skill in the art to practice the claimed invention.

The evidence provided in support of the rejection includes the references Burton and Moore 1998; Feinberg and Moore 2002; Moore and Burton 1999; Johnston 2000; Letvin 1998; Jacobson 1993 and Kohler 1992 (abstract). Each of Burton and Moore 1998; Feinberg and Moore 2002; Moore and Burton 1999; Johnston 2000; and Letvin 1998 is focused on HIV vaccines and the need to induce neutralizing immune responses against HIV virions as a means to combat infection. Jacobson 1993 is cited as evidence questioning the efficacy of passive immunity, i.e. administering antibodies to block infection. Neither the Jacobson 1993 reference nor a citation for it were provided in the Official Action. In a teleconference with Examiner Parkin on April 5, 2006, Examiner Parkin provided Applicants' undersigned attorney with the citation. Applicants' undersigned attorney was able to obtain a copy of the abstract which indicates the subject matter related to the use of anti-HIV plasma. The abstract indicates that the plasma tested failed to demonstrate clinical benefit but that the results do not rule out usefulness of other preparations. Kohler 1992 (abstract) is cited as evidence that antibodies against HIV proteins are unlikely to provide protective immunity, i.e. thwart infection, because antibodies in HIV infected individuals have low affinities to HIV.

In each case, the technology discussed in the cited reference is different and distinct from that which constitutes the claimed invention. The claimed invention is not an HIV vaccine as discussed in the cited references. Rather, the immunotherapy of the claimed invention is directed at inactivating a biological protein. The claimed invention inhibits HIV

Vpr, a protein which Applicants have shown to be important in HIV replication. The antibody responses discussed in the cited references refer to those induced by vaccines which are intended to inhibited infection by targeting viral particles. The antibodies in the present invention function to inhibit the protein Vpr from performing its function in viral replication. The evidence cited in the Official Action is directed to the state of the art for making anti-HIV vaccines and passive immunization and not therapeutic compositions such as antibodies which inhibit the functioning of HIV proteins involved in replication. The evidence cited in the Official Action does not support an assertion that one skilled in the art would question Applicants' use of antibodies against Vpr to inhibit Vpr's function.

Applicants have discovered that HIV Vpr plays a unique role in HIV replication and is thus a target for therapeutics. Applicants disclose the presence of HIV Vpr in infected individuals. Applicants disclose the value of inhibition of HIV Vpr, i.e. inhibition of HIV replication in infected cells. According to the claimed invention, anti-Vpr antibodies are used to inhibit Vpr. The antibodies are not intended to neutralize HIV virion particles and thereby prevent infection but to inhibit viral replication. Nothing in the cited references relate to this strategy for combating HIV.

Applicants' provide the declaration of co-inventor Dr. David B. Weiner which refers to the peer-reviewed publication, Levy D.N., Refaeli, Y. and Weiner D.B. (Feb. 1995) J. Virology 69(2):1243-1252 which discloses results that demonstrate that Vpr protein is active as an extracellular molecule and that it acts to increase HIV replication. Extracellular Vpr was inhibited by anti-Vpr antibodies. The declaration further states that the claimed subject matter "relates to the use of anti-Vpr antibodies to target extracellular Vpr in an effort to inhibit its function" and that the "antibodies function to inhibit a biologically active protein whose function is associated with a pathological condition." In addition, the declaration notes that that the time the present invention was made, there were antibody-based therapeutics which function to inhibit a biologically active protein whose function is associated with a pathological condition and anti-HIV therapeutics which function to inhibit a biologically active HIV protein whose function is associated with viral replication.

The evidence offered in the Official Action does not support the rejection of the claimed subject matter. While raising questions about the ability to develop vaccines that target viral particles and infected cells, none of the cited references speak to the issue of targeting Vpr which is present in serum free of association with viral particles. The

declaration of Dr. David B. Weiner refers to the biological activity of extracellular Vpr as being associated with viral replication and its inhibition using anti-Vpr antibodies.

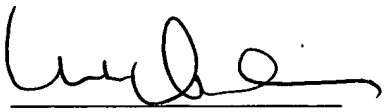
Those skilled in the art would conclude in view of the evidence of record that the invention can be made and used without undue experimentation. The evidence of record supports Applicants contention that Vpr is an important viral protein involved in viral replication and its inhibition results in inhibited viral replication. One skilled in the art would conclude that in view of the evidence of record, there is on balance insufficient evidence to doubt the objective truth of Applicant's assertion that the claimed invention is enabled.

Conclusion

The examination of these claims and passage to allowance are respectfully requested. An early Notice of Allowance is therefore earnestly solicited. Applicant invites the Examiner to contact the undersigned at 215.665.5592 to clarify any unresolved issues raised by this response.

As indicated on the transmittal accompanying this response, the Commissioner is hereby authorized to charge any debit or credit any overpayment to Deposit Account No. 50-1275.

Respectfully submitted,



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Attachment: Unexecuted Declaration of Dr. David B. Weiner